

We claim:

1. A still image capturing device, comprising:

an image sensor including a plurality of pixel elements;

an electronically actuatable shutter device including a plurality of individually addressable and actuatable shutter elements, with a shutter element of said plurality of individually addressable shutter elements substantially corresponding to at least one of said plurality of pixel elements;

a memory storing an exposure threshold and one or more exposure patterns;

a processor communicating with said image sensor, with said shutter device, and with said memory, said processor controlling said plurality of shutter elements according to said exposure threshold and/or according to an exposure pattern stored in said memory, whereby different shutter elements of said shutter device may be light transmissive for different lengths of time.

2. The apparatus of claim 1, wherein said shutter device comprises a liquid crystal display (LCD) shutter element comprising a two-dimensional array of individually addressable and actuatable shutter elements.

3. The apparatus of claim 1, wherein said shutter device comprises a microelectromechanical shutter element comprising a two-dimensional array of individually addressable and actuatable shutter elements.

4. The apparatus of claim 1, wherein said memory further includes a predetermined image exposure period that controls an overall exposure duration of an image capture.

5. The apparatus of claim 1, wherein said image sensor comprises film.
6. The apparatus of claim 1, wherein said image sensor comprises an electronic image sensor.
7. The apparatus of claim 1, wherein said exposure pattern comprises two or more pixel unit exposure durations.

8. A method of capturing images with a still image capturing device, comprising the steps of:

initiating an image capture in an image sensor of said still image capturing device, with said image sensor comprising a plurality of pixel elements;

monitoring an elapsed exposure time, during which said pixel elements are exposed to light from an image;

comparing a light intensity signal of a pixel unit composed of at least one pixel element to an exposure threshold; and

comparing said elapsed image exposure time to a predetermined image exposure period if said light intensity signal is less than or equal to said exposure threshold; and

closing a shutter unit associated with said pixel unit if said intensity is greater than or equal to said exposure threshold or if said elapsed image exposure time is greater than said predetermined image exposure period.

9. The method of claim 8, wherein the method is iteratively performed for all pixel units of said image sensor.

10. The method of claim 8, wherein said image sensor comprises an electronic image sensor.

11. The method of claim 8, wherein said image sensor comprises film.

12. The method of claim 8, wherein said pixel unit comprises a pixel.

13. The method of claim 8, wherein said pixel unit comprises a pixel grouping.

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14. A method of capturing images with a still image capturing device, comprising the steps of:

initiating an image capture in an image sensor of said still digital image capturing device by opening a shutter device, said shutter device including a plurality of shutter elements capable of being grouped into a plurality of shutter units, with said image sensor including a plurality of pixel elements capable of being grouped into a plurality of pixel units;

monitoring an elapsed exposure time for each of said plurality of pixel units;

comparing an elapsed exposure time of a particular pixel unit to a corresponding pixel unit exposure duration included in a particular exposure pattern; and

closing an associated shutter unit if said elapsed exposure time is greater than or equal to said pixel unit exposure duration;

wherein said exposure pattern is used to control shutter closing times of a plurality of pixel units according to said particular exposure pattern.

15. The method of claim 14, wherein the method is iteratively performed for all pixel units.

16. The method of claim 14, wherein said image sensor comprises an electronic image sensor, the method further including the steps of:

pre-exposing said electronic image sensor to sample light levels; and

generating said exposure pattern from said light levels, with said exposure pattern comprising a plurality of pixel unit exposure durations.

17. The method of claim 14, wherein said image sensor comprises an electronic image sensor.

18. The method of claim 14, wherein said image sensor comprises film.

19. The method of claim 14, wherein said pixel unit comprises a pixel.

20. The method of claim 14, wherein said pixel unit comprises a pixel grouping.

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